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COMPARISON OF LIPID PROFILE, FASTING BLOOD SUGAR, BLOOD PRESSURE AND BODY MASS INDEX AMONG PATIENTS UNDERGOING HYSTERECTOMY WITH AND WITHOUT OOPHORECTOMY

Gynaecology

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ABSTRACT

Introduction: There are a lot of changes in the cardiovascular status of women after a hysterectomy with oophorectomy. Our study is a prospective comparative study to find out major changes in lipid profile, blood pressures, fasting blood sugar, and body mass index among women after hysterectomy alone and hysterectomy with oophorectomy

Materials and Methods: From November 2017 to February 2020, patients aged above 40 years who underwent hysterectomy or Hysterectomy with oophorectomy were recruited into two groups with 300 patients in each group (group I- hysterectomy, group II – hysterectomy with BSO). Preoperatively detailed history was noted. All subjects were checked for fasting lipid profile, fasting blood sugar, blood pressure, body mass index. Post operatively after 6 weeks and 3months the subjects lipid profile, fasting blood sugar, blood pressure, body mass index were checked. The results were tabulated as per variables and analysed statistically

Results : There is a statistically significant rise in the total cholesterol, LDL, TG value among the group II in the 6 weeks value and 3 months value. There is a statistically significant rise in the VLDL, TC/HDL ratio, FBS and BMI value among the group I and II in the 6 weeks and 3 months values. There is a statistically significant rise in the SBP value among the group II in the 6 weeks and 3 months value.

Conclusion: Dyslipidaemia was more pronounced in surgical menopausal women than those of hysterectomy alone. Since there is a favourable effect of Oestrogen on lipid profile, it would be worthwhile to consider ovarian conservation among those undergoing hysterectomy for benign conditions and also to consider HRT to those undergoing surgical menopause.

KEYWORDS

Lipid profile, Hysterectomy, Hysterectomy and BSO, Surgical menopause,

INTRODUCTION

Hysterectomy is the second most common major surgical procedure performed on women all over the world next to caesarean section [1]. A study conducted in a northern state of India (Haryana) states that incidence of hysterectomy was 7% among married women above 20 years of age [2]. Another study from Gujarat pointed out that 7-8% of rural women and 5% of urban women had already undergone hysterectomy at an average age of 37 years[3].

Elective oophorectomy (EO) was an option for women undergoing benign hysterectomy as a means of reducing their ovarian cancer risk, as there are no screening methods for ovarian cancer. Benefits also include reduced risk of repeat surgery due to adnexal masses and reduced anxiety related to perceived risk of ovarian and breast cancer. The potential negative side effects of EO, such as decreased cognition and sexual function and increased risk of osteoporosis and cardiac mortality has been recognized and now there is an increased move for ovarian conservation. The implications of this elective procedure and the possible consequences without it require physicians to review the pros and cons with patients in light of the patient's individual circumstances and ovarian cancer risk.[4]

The current recommendation[5] by the American College of Obstetricians and Gynecologists (ACOG) on EO is that "strong consideration should be made for retaining normal ovaries in premenopausal women who are not at increased genetic risk of ovarian cancer. However, given the risk of ovarian cancer in postmenopausal women, ovarian removal at the time of hysterectomy should be considered for these women."[5]

Surgical menopause ie., hysterectomy with bilateral oophorectomy is performed due to different pathological causes before natural menopause. Menopause, whether it occurs naturally or surgically, is characterized by the reduced production of hormones by the ovaries[6]. There are major changes in oestrogen, progesterone, androgen and gonadotropin levels which may be due to cessation of ovarian follicular activity.[7]

There are a lot of changes in the cardiovascular status of women after a hysterectomy with or without oophorectomy. Our study aims to find out major changes in lipid profile, blood pressures, fasting blood sugar, and body mass index among women after hysterectomy alone and hysterectomy with oophorectomy.

MATERIALS AND METHODS

This is a prospective comparative study conducted at the department of obstetrics and gynaecology in jubilee mission medical college, thrissur from November 2017 to February 2020.

SAMPLE SIZE: 300 in each group
Group I – Hysterectomy
Group II – Hysterectomy with oophorectomy

INCLUSION CRITERIA:

1. Women who are undergoing hysterectomy alone or undergoing hysterectomy with bilateral salpingoophorectomy for any gynecological indications.
2. Age above 40yrs

EXCLUSION CRITERIA:

1. Subjects with any acute or chronic disease (hypertension, diabetes mellitus, dyslipidemia, heart disease, tuberculosis)
2. History of myocardial infarction, angina pectoris, cerebrovascular accident or taking cardiac drugs.
3. Subjects on HRT and smokers

Women who fulfilled the inclusion criteria were selected till the required number of sample size in each group. The aim and objective of the study was explained in detail to the subjects and their written informed consent was taken. Detailed history including age, menstrual history, Past obstetric history, last child birth, previous major illness, past and present medical and surgical history,drug history were noted. General examinations including BP, Height, weight, BMI were recorded. Systemic and gynecological examination done and preoperative investigations was done to all subjects including fasting Lipid profile,FBS. Post operatively patients are advised to take their usual diet, to take iron and calcium tablets and to avoid any ayurvedic medications. Post operatively after 6 weeks and 3months when the subjects come for review checkup, they are advised to check lipid profile, blood sugars after fasting for 10hrs and review with report. General examination including BP, height, weight, BMI will be noted. Systemic and gynaecological examination were done. Post operative data of plasma lipid levels, Fasting blood sugars, Blood pressure and BMI are compared with preoperative levels among each group. The results were tabulated as per variables and analysed statistically.

STATISTICAL METHODS

The data was entered in Microsoft Excel spread sheet. All the data obtained were evaluated using the Statistical software namely SPSS 22.0, and R environment ver.3.2.2 were used for the analysis of the data. Analysis of variance (ANOVA) has been used to find the significance of study parameters between three or more groups of patients Chi-square/ Fisher Exact test has been used to find the significance of study parameters on categorical scale between two or more groups, Non-parametric setting for Qualitative data analysis. Fisher Exact test used when cell samples are very small.Statistical Significance was set to $p<0.05$.

RESULTS

There is statistically significant rise in the total cholesterol value among the group II in the 6 weeks value 181.17±28.83 (increase of 11.510 and P value<0.001) and 3months value196.02±31.28 (increase of 26.363 and P value : < 0.001); but the rise in the total cholesterol value among the group I is not statistically significant.

There is statistically significant rise in the LDL value among the group II in the 6 weeks value 91.94±15.68 (increase of 8.090and P value<0.001) and 3 months value 108.51±73.37 (increase of 24.660and P value :< 0.001). The rise in the LDL value among the group I is not statistically significant after 6 weeks but becomes significant statistically after 3 months 80.61±17.66 (increase of 3.980and P value: 0.001).

There is statistically significant decrease in the HDL value among the group I and II in the 6 weeks and 3 months values (P value:< 0.001). There is statistically significant rise in the TG value among the group II in the 6weeks 164.03±24.97 (increase of 9.810and P value<0.001) and 3 months value179.42±23.64 (increase of 25.203 and P value :<0.001). The rise in the TG valueamong the group I is not statistically significant after 6 weeks and 3 months (P value:0.293).

There is statistically significant rise in the VLDL , TC/HDL ratio, FBS and BMI value among the group I and II in the 6 weeks and 3 months values(P value:<0.001). There is statistically significant rise in the SBP value among the group II in the 6weeks 122.39±9.48 (increase of 9.907and P value<0.001) and 3 months value 135.77±57.49 (increase of 23.280and P value:<0.001); but the rise in the SBP value among the group I is not statistically significant.

There is statistically significant rise in the DBP value among the group II in the 6 weeks 83.83±7.34 (increase of 10.733and P value<0.001) and 3 months 89.53±7.48 (increase of 16.433 and P value:<0.001) postoperative values; but the rise in the DBP value among the group I is not statistically significant.

Out of the 300 patients studied among group I majority(64 %) belonged to 40 to 50years age group; 26 % belonged to 51 to 60 years age group; 6.7 % belonged to 61-70years age group; 3 % belonged to 71-80 years age group; 0.3 % belonged to above 80 years group. Out of the 300 patients studied among group II majority (56.7%) belonged to 40 to 50years age group; 30 % belonged to 51 to 60 years age group; 12.7 % belonged to 61-70years age group; 0.7 % belonged to 71-80 years age group. There is no statistically significant correlation between age of the patient among both groups with a p value of 0.211.

Variables	Group I	Group II	Total	P value
Total Cholesterol (mg/dl)				
Preoperative values	161.01 ±26.81	169.66 ±23.78	165.33 ±25.68	<0.001**
Postoperative values (6 weeks)	162.59 ±26.89	181.17 ±28.83	171.88 ±29.36	<0.001**
Postoperative values (3months)	164.73 ±27.08	196.02 ±31.28	180.38 ±33.16	<0.001**
LDL(mg/dl)				
Preoperative values	76.63 ±17.26	83.85 ±12.57	80.24 ±15.51	<0.001**
Postoperative values (6 weeks)	78.54 ±16.87	91.94 ±15.68	85.24 ±17.60	<0.001**
Postoperative values (3months)	80.61 ±17.66	108.51 ±73.37	94.56 ±55.11	<0.001**
HDL (mg/dl)				
Preoperative values	81.66 ±11.82	78.82 ±12.45	80.24 ±12.21	0.004**
Postoperative values (6 weeks)	78.95 ±12.10	72.50 ±11.99	75.73 ±12.46	<0.001**
Postoperative values (3months)	76.66 ±11.97	62.32 ±11.02	69.49 ±13.55	<0.001**
TG (mg/dl)				
Preoperative values	152.17 ±26.87	154.22 ±25.38	153.19 ±26.14	0.337
Postoperative values (6 weeks)	151.71 ±27.52	164.03 ±24.97	157.87 ±26.96	<0.001**
Postoperative values (3months)	154.05 ±27.80	179.42 ±23.64	166.73 ±28.74	<0.001**
VLDL (mg/dl)				
Preoperative values	24.76 ±3.86	28.14 ±5.82	26.45 ±5.21	<0.001**
Postoperative values (6 weeks)	26.01 ±4.04	29.19 ±5.22	27.60 ±4.92	<0.001**
Postoperative values (3months)	28.00 ±4.24	31.12 ±5.59	29.56 ±5.19	<0.001**
FBS (mg/dl)				
Preoperative values	102.58 ±13.72	104.18 ±13.09	103.38 ±13.42	0.146
Postoperative values (6 weeks)	105.48 ±13.79	113.00 ±12.42	109.24 ±13.64	<0.001**
Postoperative values (3months)	107.23 ±13.56	123.69 ±11.82	115.46 ±15.15	<0.001**
SBP (mm Hg)				
Preoperative values	112.09 ±9.12	112.49 ±9.61	112.29 ±9.36	0.601
Postoperative values (6 weeks)	112.61 ±8.77	122.39 ±9.48	117.50 ±10.35	<0.001**
Postoperative values (3months)	112.47 ±8.88	135.77 ±57.49	124.12 ±42.72	<0.001**
BMI (kg/m^2)				
Preoperative values	26.00 ±4.07	26.43 ±4.10	26.21 ±4.09	0.194
Postoperative values (6 weeks)	26.64 ±4.16	27.58 ±4.09	27.11 ±4.15	0.005**
Postoperative values (3months)	27.09 ±4.24	28.80 ±4.15	27.95 ±4.28	<0.001**

CONCLUSION

From the present study, it can be concluded that dyslipidaemia is more pronounced in surgical menopausal women than those of hysterectomy alone. Impairment of lipid profile status was observed by higher level of TC, LDLC,TG and lower level of HDL-C in surgical menopausal women in comparison to those of hysterectomy alone.The rise of triglycerides, VLDL, TC/HDL was same among both the groups.The risk of developing hypertension is also more among the surgical menopause group.However the risk of developing diabetes, obesity is more or less the same in both the groups. Age and parity was not found to affect the lipid profile status among both the groups.Since there is a favourable effect of Oestrogen on lipid profile, it would be worthwhile to consider ovarian conservation among those undergoing hysterectomy for benign conditions.

Conflict of interest: None

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